

REMARKS

Claims 1, 4, 19, 20, and 23-30 are all the claims pending in the application, prior to the present Amendment.

The Examiner has objected to "Claim 20" at page 6 of the previous Amendment. The Examiner asks whether claim 20 should be claim 28. The Examiner is correct that Claim 20 at page 6 of the previous Amendment was misnumbered, and should have been numbered as Claim 28. In the above listing of the claims, applicants have numbered the Claim 20 from page 6 of the previous Amendment as Claim 28. In the above listing, applicants have listed this claim as "(previously presented)."

Claims 1, 19, 20, 24-25 and 29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the newly cited US 2003/0105261 to Komitsu et al, and optionally as evidenced by US 3,661,885 to Haddick et al.

Applicants submit that the cited prior art does not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Applicants have amended claim 1 to incorporate the recitations of claim 25 to recite that component (B) is tin neodecanoate (B), and that component (C) is a primary amine.

Support for amended claim 1 can be found in claim 25 and the paragraph beginning at page 37, line 18 of the present specification. Applicants have canceled claim 25.

The curable composition recited in amended claim 1 has a technical feature in that the composition contains the following components.

That is, the curable composition of claim 1 contains

(A) a polyoxyalkylene polymer which has on average 1.1 to 5 groups per one molecule thereof represented by the general formula (1) and has a silicon-containing functional group;

(B) tin neodecanoate;

(C) a primary amine as a component (C); and
a phthalate plasticizer.

The curable composition can achieve an excellent effect of providing both high curability and heat resistance although a non-organotin catalyst is used.

This effect achieved by the composition having such a technical feature is an excellent effect that a person of ordinary skill in the art could not have expected.

In support of this excellent effect, applicants refer the Examiner to an executed Declaration Under 37 C.F.R. § 1.132 submitted herewith and the previously submitted Declarations Under 37 C.F.R. § 1.132 submitted on May 26, 2009 and October 4, 2010, and the reasons therefore are described below.

(i) The component (A) has on average 1.1 to 5 groups per one molecule thereof represented by the general formula (1), which contributes to high curability and high heat resistance as is clear from the experimental results in the Declaration Under 37 C.F.R. § 1.132 submitted on May 26, 2009. Specifically, comparison between Experiment Nos. 1 and 3 and Experiment No. 2 clearly shows that a curable composition containing no group represented by the general formula (1) has low curability. Further, a composition with a polymer having 5 or more groups per one molecule thereof represented by the general formula (1) provides low heat resistance, which is clear from comparison between Experiment Nos. 1 and 3 and Experiment No. 4.

(ii) Tin neodecanoate of the component (B) contributes to high curability, as is clear from the experimental results in the Declaration Under 37 C.F.R. § 1.132 submitted on May 26, 2009. Specifically, comparison between Experiment No. 1 and Experiment No. 5 clearly shows that a curable composition containing tin neodecanoate shows a higher curing rate than a composition containing tin 2-ethylhexanoate.

(iii) A primary amine as the component (C) contributes to high curability and heat resistance, as shown in the present Declaration Under 37 C.F.R. § 1.132 submitted herewith. Specifically, comparison between Experiment No 1. and Experiment No. 2 reveals that a curable composition provides higher curability and higher heat resistance in the case of containing a primary amine than in the case of containing a secondary amine.

(iv) In the case that the plasticizer used is a phthalate plasticizer, the curability of the curable composition is improved. This is clear from the Declaration Under 37 C.F.R. § 1.132 submitted on October 4, 2010.

Specifically, comparison between Examples 5 and 6 and Experiment Nos. 1 and 2 clearly shows that a curable composition has higher curability in the case of containing a phthalate plasticizer than in the case of containing any other plasticizer.

The above points (i)-(iv) show that amended claim 1, containing the specific combination of components, achieves an unexpected effect of providing both high curability and high heat resistance.

In contrast, Komitsu et al do not mention the number of groups represented by the general formula (1), and of course do not teach that a curable composition can provide both remarkably high curability and remarkably high heat resistance in the case that a polymer contains on average 1.1 to 5 groups per one molecule.

Komitsu et al, meanwhile, do mention stannous versatate. Still, stannous versatate is only mentioned as one of the examples of tin carboxylates including tin 2-ethylhexanoate, and there is no teaching or suggestion that use of tin neodecanoate increases the curing rate of the composition.

Komitsu et al also mention amine compounds including primary amines and secondary amines, as examples of amines. However, Komitsu et al neither teach nor suggest that use of a primary amine leads to higher curability and higher heat resistance than in the case of using any other amine compound.

Further, there is no teaching or suggestion in Komitsu et al that a curable composition containing a phthalate plasticizer as its plasticizer shows higher curability than a curable composition containing any other plasticizer, either.

Also, Haddick et al neither teach nor suggest that the above specific combination of components contributes to both high curability and high heat resistance.

As can be seen from the above, the claimed invention, containing the limited, specific combination of components, achieves an excellent effect of providing both high curability and high heat resistance which has been difficult with the prior art, and a person of ordinary skill in the art could not have expected such an excellent effect.

In view of the above, applicants submit that the cited prior art does not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Claim 27 has been rejected under 35 U.S.C. 103(a) as being unpatentable over the newly cited US 2003/0105261 to Komitsu et al in view of WO 00 56818 to Masaoka et al, with US 6,569,980 being cited as an equivalent to WO 00 56818.

Claim 27 depends from claim 1. Masaoka et al do not supply the above discussed deficiencies of Komitsu et al. Accordingly, applicants submit that claim 27 is patentable at least for the same reasons as set forth above for claim 1.

Claims 4, 23, 26 and 30 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the newly cited US 2003/0105261 to Komitsu et al in view of EP 538 881 to Suzuki and WO 03 011978 to Okamoto et al, with US 7,115,695 being cited as an equivalent to WO 03 011978, and optionally as evidenced by US 3,661,885 to Haddick et al.

Applicants submit that the cited prior art does not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

The curable composition of claim 4 has a technical feature in that the composition contains the following components. That is, the curable composition contains

(A) a polyoxyalkylene polymer which has on average 1.1 to 5 groups per one molecule thereof represented by the general formula (1) and has a silicon-containing functional group;

(B) a carboxylic acid in which the carbon atom adjacent to the carbonyl group is a quaternary carbon atom; and

a phthalate plasticizer.

The curable composition of claim 4 can achieve an excellent effect of providing both high curability and heat resistance although a non-organotin catalyst is used, as shown in the previously submitted Declaration Under 37 C.F.R. § 1.132 submitted on May 26, 2009. That is, it is clear from the results of Experiment Nos. 6-11 in the Declaration Under 37 C.F.R. § 1.132 submitted on May 26, 2009 that the above specific combination of components leads to both high curability and high heat resistance.

Komitsu et al teach neither the use, as the component (B), of a carboxylic acid in which the carbon atom adjacent to the carbonyl group is a quaternary carbon atom, nor that use of a specific carboxylic acid as a curing catalyst leads to a remarkably high curing rate.

Meanwhile, Suzuki et al do not teach use of such a carboxylic acid. Suzuki et al show, as examples, various types of carboxylic acids, such as aliphatic monocarboxylic acids, aliphatic dicarboxylic acids, aliphatic polycarboxylic acids, aromatic carboxylic acids and other amino acids (page 4, lines 24 to 58). These examples include no carboxylic acids that has a quaternary carbon atom adjacent to the carbonyl group of the carboxylic acid. Suzuki et al do not teach that use of a specific carboxylic acid as a curing catalyst leads to a remarkably high curing rate, either.

Also, the Examiner states that Okamoto et al teach that “the carboxylic acid from which the metal carboxylate is formed is preferably neodecanoic acid.” Actually, Okamoto et al do not teach use of any **free** carboxylic acid that has a quaternary carbon atom adjacent to the carbonyl group. This is apparent from the above expression of the Examiner “the carboxylic acid from which the metal carboxylate is formed.” The expression means that a “carboxylic acid” in Okamoto et al is a carboxylic acid residue of metal carboxylate. This can be recognized from the description in column 14, lines 35 to 65 of US 7,115,695 to Okamoto et al which states:

The component (B) contain, as the main ingredient, **carboxylic acid** metal salts represented by the general formulas (2) to (12)....

As the carboxylic acid, a C₂₋₄₀ (including carbonyl carbon) hydrocarbon carboxylic acid group-containing compound can be preferably used....

The effect of providing both high curability and high heat resistance that the claimed curable composition containing the specific combination of components achieves therefore could not have been expected by a person of ordinary skill in the art. Accordingly, it is clear that the

invention according to claim 4 is not obvious over Komitsu et al even in combination with Suzuki et al and Okamoto et al.

In view of the above, applicants submit that the cited prior art does not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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